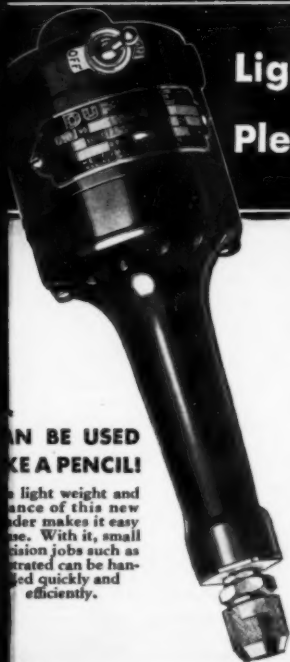


Hitchcock's Machine Tool Blue Book

JUNE, 1934

TWENTY-NINTH YEAR



**Light in Weight
and
Plenty of Power**

THE NEW DUMORE MODEL 8H-G

Craftsmen in tool rooms, pattern, machine and engraving shops, will welcome this new grinder that handles like a pencil. . . It is almost indispensable where hand grinding is required. . . This new grinder weighs only 1 lb. 10 ozs., is equipped with a $\frac{1}{40}$ H. P. universal motor which has a speed of 15,000 R. P. M.; $\frac{1}{8}$ " capacity chuck, toggle switch, 8 feet of rubber covered cord, and a set of three grinding wheels on shanks. . . The price is only \$17.50 and is available through your industrial distributor

Send for descriptive literature.

DUMORE CO. 65 Sixteenth St. Racine, Wis.

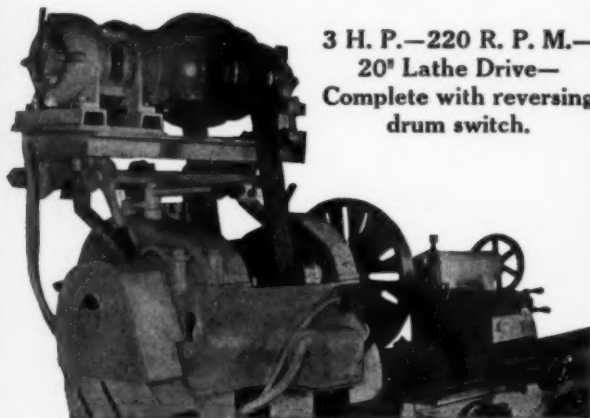
DUMORE
HIGH SPEED PRECISION
GRINDERS

**CAN BE USED
LIKE A PENCIL!**

A light weight and balance of this new grinder makes it easy to use. With it, small precision jobs such as engraving can be handled quickly and efficiently.

PUBLISHED AT 408 S. DEARBORN ST. CHICAGO

Machine Tool Motorization



3 H. P.—220 R. P. M.—
20" Lathe Drive—
Complete with reversing
drum switch.

Modernize your cone pulley machines by the addition of one of these sturdy drives. Easy to attach—4 bolts and a short belt making your machine ready for heavy production. Complete drives available for a wide range of machines.

WRITE FOR DATA

THE PRODUCTION EQUIPMENT CO.

5213 Chester Ave.,

CLEVELAND, OHIO

Published at 408 S. Dearborn St. Chicago

Hitchcock's Machine Tool Blue Book

Selected
Circulation

35,000
Monthly

JUNE, 1934

TWENTY-NINTH YEAR

A Good Record



On page seven of this issue is a list of our Chicago advertisers, with an invitation to the visitors to the World's Fair to call on them while here.

Just one year ago we published a similar invitation, with a list of Chicago advertisers containing the names of eight manufacturers.

Today we have 14 Chicago manufacturers advertising in the BLUE BOOK, an increase of 75%. But that isn't the best of it.

In addition to the six new ones, *every one of the eight Chicago manufacturers who advertised in this publication a year ago is still with us.*

This splendid record of satisfaction through a dull period is something for advertisers to consider, and consider carefully.

As a practical pointer on service actually performed, it is worth more than all the solicitation promises that could be devised.

Published By

Hitchcock Publishing Co.
508 S. Dearborn St., Chicago, Ill.

Consult the Classified Finding Index for your requirements

KRW Hydraulic and Sensitive ARBOR PRESSES

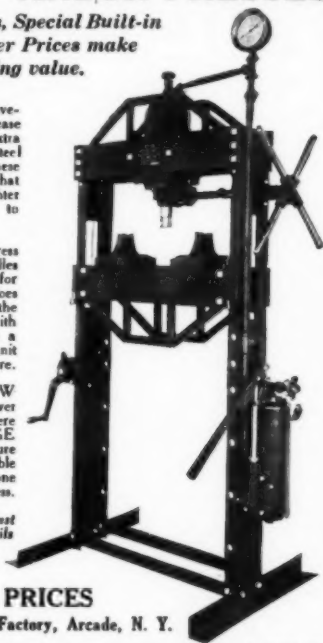
New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.

THE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this KRW feature as a time and labor saver can be appreciated. Also there is **NO EXTRA CHARGE** for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

Write for special circular, just off the press, giving full details and specifications of all KRW Arbor Presses.



PRICES

F. O. B. Factory, Arcade, N. Y.

No. 37—35 ton Hydraulic and Sensitive Arbor Press (hand operated)	\$126.00
No. 37B—35 ton Hydraulic and Sensitive Arbor Press (air-oil operated)	128.00
No. 37E—50 ton Hydraulic and Sensitive Arbor Press (hand operated)	150.00
(Can also be furnished in air-oil operated at same price)	
No. 37F—70 ton Hydraulic and Sensitive Arbor Press (hand oper. only)	275.00
Gauge and fittings, \$15.00 extra on all presses.	

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPARTMENT

90 West St., New York, N. Y.

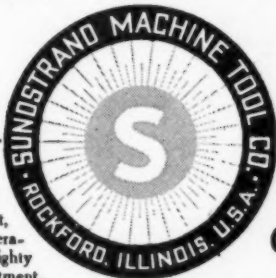
WEST COAST BRANCH

722 Mateo St., Los Angeles

SUNDSTRAND BALANCING TOOLS

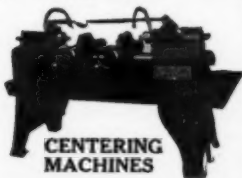
Save time and money. Anti-friction discs; strong, well made, economical. Range in size from No. 1 Bench, with capacity for 800 lbs., to No. 5 Extra Heavy, with capacity for 24,000 lbs. Others available for balancing airplane propellers, balancing and drilling flywheels, pulleys, etc.

Get details.



No. 56 illustrated, others available. Fast, accurate, an operation saver, a mighty profitable investment.

BENCH CENTERS



**CENTERING
MACHINES**

Accurate, compact, portable. Adjustable heads, Quick-acting spindle. Seven sizes.



These Sundstrand tools, like our Lathes and Milling Machines, cut costs and make work easier. . . .
INVESTIGATE! Address our Dept. H for details.

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

WHEN YOU COME TO THE 1934 CHICAGO WORLD'S FAIR

Get acquainted with the following *Chicago Manufacturers and Dealers*, who are advertisers in this publication. They will be glad to welcome you. They are in position to supply your present and future requirements in Machine Tools and allied shop equipment to your mutual advantage.

MANUFACTURERS

Abart Gear & Machine Co.,	4832 W. 16th St.
Acme Industrial Co.,	419 N. Carpenter St.
Armstrong Bros. Tool Co.,	308 N. Francisco Ave.
Armstrong-Blum Mfg. Co.,	341 N. Francisco Ave.
E. A. Baumbach Mfg. Co.,	1810 S. Kilbourn Ave.
Chicago Wheel & Mfg. Co.,	116 S. Aberdeen St.
Cullman Wheel Co.,	1359 Altgeld St.
Dreis & Krump Mfg. Co.,	7440 Loomis Blvd.
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Illinois Testing Laboratories,	150 W. Austin Ave.
Procurier Safety Chuck Co.,	14 S. Clinton St.
N. A. Strand & Co.,	5001 N. Lincoln St.
Up-To-Date Machine Works,	2900 S. Wabash Ave.
Wittek Mfg. Co.,	4309 W. 24th Place.

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Geo. M. Bernstein & Co.,	14 S. Clinton St.
Clinton Machinery Co.,	35 S. Clinton St.
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E. L. Essley Machinery Co.,	825 Rees St.
Goldsher Machinery Co.,	825 W. Lake St.
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Midland Steel & Equipment Co.,	402 S. Clinton St.
Midwest Equipment Co.,	628 W. Lake St.
J. P. Rentschler & Co.,	6722 N. Maplewood Ave.
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Victor Machinery Co.,	128 S. Clinton St.
A. D. White Machinery Co.,	108 N. Jefferson St.

The HANCOCK OXYCOP **Cuts Steel Quicker—At Less Cost!**

Here's How!

Speedy Cutting
Economical Operation
Low Upkeep
Accurate Cutting
Wide Range
Uses City Gas
Easy to Operate
Pays for Itself
in Very Short Time



Why Take 5 Hours if 5 Minutes Will Do It?

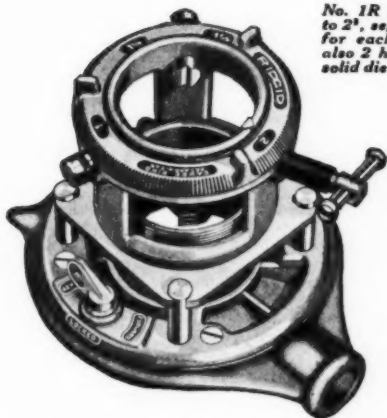
DIES, jigs, fixtures, etc., usually drilled and finished on a shaper can be done with the Simplex OxyCOP in a few minutes—instead of hours. Actual time studies show that jobs done by conventional methods and requiring 85 hours to complete were cut on the OxyCOP in *less than 6 hours*. Cuts when complete are clean and smooth, unless a finished surface is desired, no machining is necessary. Steel cut this way does not carbonize.

Every Tool Room Can Use It

Just as Chrysler, Ford, General Motors, Timken-Detroit Axle and other manufacturers are taking advantage of its economical operation, accuracy and low upkeep. If you wish to materially reduce your costs it will pay you to investigate the Hancock OxyCOP. 3 sizes—No. 1, illustrated above, has cutting capacity of 24"x18"; No. 2, 36"x24" and No. 3, 60"x40". Every machine backed by our guarantee.

*Write for Illustrated Catalog Giving Complete Information,
Including Interesting Tables of Cutting Time.*

BRADLEY MACHINERY CO.
6500 Epworth Blvd., **Detroit, Mich.**



No. 1R illustrated, 1" to 2", separate chasers for each size. Made also 2 handle. No. 1, solid die.

FULL-FLOATING POSTS In this new Threader

ONE job—to taper the threads. That's all posts do in this new **RIGID** Poster Threader. No strain on them—drive is direct, handle to head to chasers, all in a straight line that means power, precision and clean threads.

Extra-heavy and not riveted, posts protect whole tool in rough handling, reducing repairs.

Other new features: chasers held by **enclosed** spring, can't fall out; ratchet lever snaps into exact reverse, forward or locked position for solid die; workholder sets to pipe size in advance, tightens with **one** screw; chasers of alloy steel interchangeable, fit any other make of poster die. Weighs only 12 lbs.

Ask your Jobber

The Ridge Tool Co., Elyria, O., U. S. A.

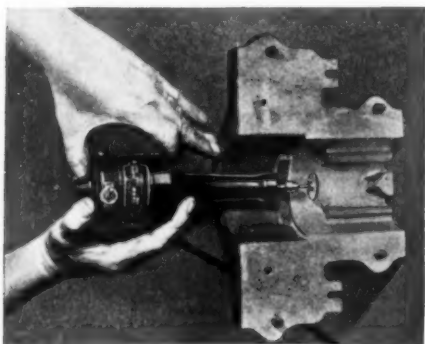
RIGID
PIPE TOOLS



Dumore Model 8-HG Grinder

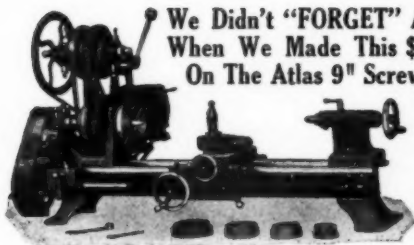
The Dumore Company, 65 Sixteenth St., Racine, Wis., announces a light weight high speed hand grinder for use in pattern shops, machine and engraving shops, and in tool rooms. The grinder will be known as the Model 8-HG. It weighs only 1 lb. 10 oz. and is so balanced that it can be held in the hand and used as one would use a pencil.

The grinder is powered by a 1/40 h. p. Dumore motor of the universal type which can be used on either A. C. or D. C. current. The motor has a speed of 15,000 r.p.m. and is excellently ventilated, making continuous use possible. The Armature is dynamically balanced, which makes for smooth operation and long commutator, brush, and bearing life. The armature is mounted in precision ball bearings of the double grease-sealed type, assuring maximum bearing life and reducing friction drag to the minimum.



Dumore Model 8-HG Hand Grinder

A special 1/8-in. capacity chuck, toggle switch, 8 feet of rubber-covered cord, plug, and three grinding wheels on shanks are regular equipment. Twelve different-shaped wheels in a special box can be supplied upon request.



**We Didn't "FORGET" Anything
When We Made This \$79 Price
On The Atlas 9" Screw Cutting
Lathe**



NEW ATLAS DRILL PRESSES

Built in four sizes, for all classes of work. Bench and Floor Models. More and bigger bearings. Special Atlas construction prevents side play in quill. Speeds up to 5200 R. P. M. Precision tools—Priced from \$13.95 to \$33.45



You buy a complete unit, ready to run, with self-contained countershaft and all belts.

Standard equipment includes automatic reversible feed; hollow headstock spindle; complete set of gears to cut from 4 to 72 threads per inch; thread cutting dial; compound rest graduated to 180°; six speeds with patented compound device, doing away with complicated back gears; V-belt drive—more pulling power.

Forty-five parts of Zamak Metal which has twice the strength of cast iron but is much lighter, thus doing away with useless weight. Lathe bed of heavily ribbed cast iron accurately machined and ground on very latest type of machine shop precision equipment—tested before shipment to .001" accuracy—9" swing—18° to 36° between centers. Immediate shipment. 10 days' trial with money back guarantee. Full line of tools and attachments at lowest prices. Send for free illustrated catalog. Be sure you know about the *Atlas Fully Equipped Lathe* before you order.

Atlas Press Company
1850 N. Pitcher St., Kalamazoo, Mich., U. S. A.

Aluminum Plating Perfected

After many years of efforts to accomplish plating of aluminum by people in various capacities and locations, this feat has recently been accomplished by the Major Engineering Corporation of 123 W. Madison Street, Chicago.

This corporation is now plating aluminum on tin mill black iron sheets of commercial size, covering the entire sheet with a smooth, even coat. They expect to be prepared soon to place same on the market.

For Your RIVETING



LINLEY NOISELESS ROTARY RIVET SPINNING MACHINES

—assure peak production and lower maintenance costs. Cover a wide range of riveting. Rigidly built and powerful. Made in 15 models.

Send samples of your work for riveting, cost of equipment, and true estimates on production.

"They Rivet Noiselessly"

LINLEY BROTHERS CO.
BRIDGEPORT, CONN.

The Grant ^{NOISELESS RIVET} Spinning Machine

the PIONEER of its type—built and constantly improved over a period of more than twenty-five years—produces highly polished heads, without hammer or tool marks, at a rate of a RIVET a SECOND.

Also built in Vertical and Horizontal Multiple Spindle Types.

Send us samples and be convinced of its superior qualities.

For work in hard-to-get-at-places, we build Hammer type Machines.

Write for Literature—and don't forget to send that sample!

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.



G LET US QUOTE YOU!

Spur - Internal - Helical - Bevel
Worms - Worm Wheels
All Types Non-Metalic Gearing
All Gears Made to Specifications.

GEARS

We Build a Complete Line of Speed Reducers.

SEND FOR CATALOG

Abart

**Gear and
Machine Co.**

4832 W. 16th St., Cicero, Ill.

— LAST WORD IN GEARS —

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads. With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

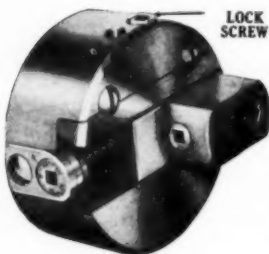
Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

**JAMES M. COLVEN, 20 Wolfe Street,
Yonkers, N. Y.**

FLYNN MICROMETER OFFSET BORING HEADS

No. 30



This dovetail designed head is particularly useful where a large offset is required. Body is solid steel, dovetailed hardened tool holder has $2\frac{1}{2}$ " offset.

Tension gib and locking device takes strain off micrometer screw. Dial graduated in thousandths, 50 thousandths to a turn, insuring accurate adjustment in boring. Bar capacity is $\frac{1}{4}$ - $\frac{3}{4}$.

Write for folder giving complete information

FLYNN MANUFACTURING CO.
435 Bates St., Detroit, Mich.

"ALNOR" Pyrometers

for the
Hardening
Furnace

TYPE NO. 1705

Inexpensive, yet accurate and durable, the ALNOR Pyrometer is used by large and small shops everywhere for heat-treating work. Because of its low price and compact size it is also very popular for soft metal melting, galvanizing, die casting, japanning, enameling, measuring flue gas temperatures and many other purposes.



Case diam.
 $4\frac{1}{2}$ in.

Scale length
 $3\frac{1}{2}$ in.

\$36

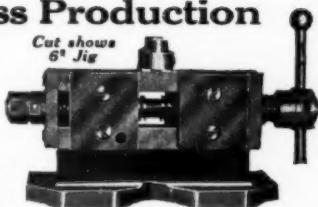
With 10 ft. Alloy Wire connector block and a No. 8 gauge insulated thermo couple 24" long without protection tube

Write for descriptive folder

Illinois Testing Laboratories, Inc.
150 W. Austin Ave., Chicago, Ill.

Drill-Press Production at the Lowest Cost

Made In 6", 8"
and 14" Sizes



"JOHN'S" Universal Drill Jigs

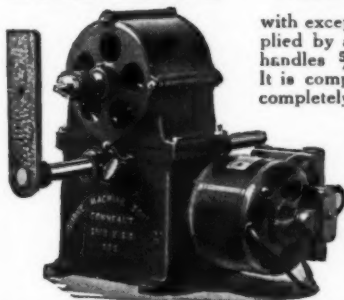
for
DRILLING
TAPPING
MILLING
REAMING
GRINDING
CENTERING, Etc.

Here is a production tool that will reduce your tooling costs. INTER-CHANGEABLE JAWS or STANDARD "V" JAWS keep the jigs in constant operation so they will handle practically any production job. Reduces loading time, maintains accuracy and gives plenty of chip room. Outlasts the average drill press.

Write for the Illustrated Folder

HEUSER MFG. CO., 1638 No. Paulina St.,
CHICAGO, ILL.

The BURKE No. 606 TAPPING MACHINE



with exceptional power supplied by a $\frac{1}{2}$ H. P. motor, handles $\frac{5}{16}$ " taps in steel. It is compactly built and is completely equipped including chuck and switch.

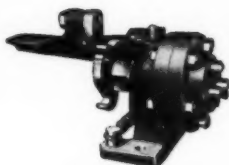
Horizontal operation simplifies handling work on irregular shapes as both hands are free.

Write for circulars and prices.

The Burke Machine Tool Co., 297 E. 16th St.,
Conneaut, Ohio



Lever Operated



Foot Operated

Also Solenoid Operated

Two, Three and Fourway Valves

For operating single and double acting cylinders on equipment using air, steam, oil or water up to 350 lbs. pressure. No troublesome plugs, leather washers or packless stems to leak, but a flat disc regrinding type that holds tight over a long period. *Write for circulars.*

W. H. Nicholson & Company
117 Oregon Street, Wilkes-Barre, Pa.

Here's a Good Sales Tip

There is no more economical way of calling on all the metal-working plants of the country than by using a page in this publication regularly to keep your name, your products and your service constantly before those who buy your goods.

The readers of these pages have a tremendous purchasing power. Make your business known to them if you have reliable products to sell.

Hitchcock Publishing Co.
308 S. Dearborn St., Chicago, Ill.

For Light and Heavy Etching

With 24 Stages of Control.

The LUMA Master Etchtool fulfills every marking requirement that can be done by an electric Etching outfit.

A Production Tool with as many as 24 different stages or varieties of control for regulating the depth of marking, this tool can be used for extra light marking of machinest scales, micrometers and fine tools or can be used or *extra heavy and deep* marking of rough and unfinished iron, cast iron, forgings, steel plates, etc.

Send for circular giving complete data and details of this modern instrument.



Built rugged for continuous work on the production line.

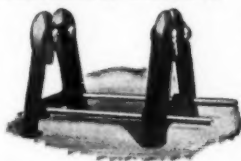
LUMA ELECTRIC EQUIPMENT CO.

DEPT. H.—Main P. O. Box No. 132—TOLEDO, OHIO

Anderson Ever Ready Balancing Ways

Exceedingly Sensitive

Easy to Manipulate



Made in six sizes to balance anything that revolves from a crank shaft to a 24,000 lb. turbine rotor. They require no special leveling, no adjustment, and no centers.

Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Beal	Bid	Bis	Bib	Ben	

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

Whitney - Jensen BRAKE

Capacity 16 Gauge and Lighter



Can be changed into box or pan brake in 10 or 15 minutes, making it a dual machine.

Bends opposite from any other machine.

Stationary platen makes very square corners possible.

Send for Our Catalog and Complete Information

WHITNEY METAL TOOL COMPANY
95 FORBES ST., ROCKFORD, ILL.

ARMSTRONG TRADE MARK REG. IN U.S. PAT. OFFICE **HIGH SPEED** **Bits and Blades**



Now

of a new steel that permits 25 to 100 more f.p.m.



Always far superior to ordinary High Speed Steels that are sold by the pound ARMSTRONG HIGH SPEED Bits and Blades have been made still better with a new steel that makes practicable greater speeds and feeds and materially reduces tool grinding. These bits and blades are carefully heat treated, hardened, tempered...ready to grind and use. They are strictly speaking fine tools in the rough, are by far the most economical.

Write for ARMSTRONG BROS. TOOL CO.
Catalog "The Tool Holder People"
B-27 308 N. Francisco Ave., CHICAGO, U. S. A.

STANDARDIZATION PAYS

Universal Joints

Steel and Bronze



Send for Circular giving specifications
and prices on complete line

BOSTON GEAR WORKS, INC.

DEPT. HMT,

NORTH QUINCY, MASS.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

BOSTON GEARS

TAPPING

PERFECT HOLES AT 3000 R. P. M.

WITH THE NEW

"PROCUNIER"

**BALL
BEARING**

**TAPPING
ATTACHMENT**

**FRICTION DRIVE
At Spindle Speed**

**FRICTION REVERSE
At Twice Spindle
Speed**

CAPACITY:

Size No. 1 { Brass $\frac{1}{4}$ "
 { Steel $\frac{3}{16}$ "
Size No. 2 { Brass $\frac{1}{2}$ "
 { Steel $\frac{5}{16}$ "

Also other sizes
and styles



Write for our catalog
with prices

PROCUNIER SAFETY CHUCK CO.

14 S. Clinton St.,

CHICAGO

ILL.

Chicago, Ill.



Acme Standardized Drill Jig Bushings

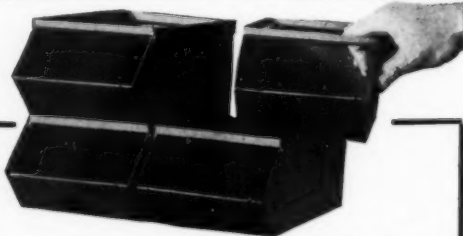


Acme Drill Jig Bushings are a standardized product, carried in stock for prompt delivery in over 6,700 standard items. They are completely finished and ready for use. The Bushings are made by the most exacting scientific methods, which insures long wear, accurate fit and absolute satisfaction. Special sizes made to order.

Send for our Bulletin, which gives complete details, sizes available, and low prices.



ACME INDUSTRIAL CO.
419 N. Carpenter St., Chicago



Save Space, Time and Labor

Cut handling costs—eliminate waste motions—save time with Stackbins.

The contents of each individual Stackbin are always accessible without disturbing the bins above or below.

Write for Illustrated Circular

STACKBIN CORPORATION
PROVIDENCE, R. I.

**BETTER-MADE
DIE SETS**

**AT LOWER
COST**

**24
DIFFERENT
STYLES**

**OVER
95,000
SIZES**



Semi-Steel

Drop Forged Steel

Send For Our New 208 Page Catalog

E. A. BAUMBACH MFG. CO.
1810 South Kilbourn Ave., CHICAGO, ILLINOIS

— NICHOLSON — Expanding Mandrels

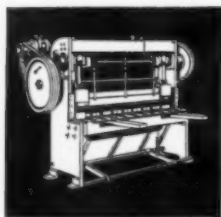


JOBS with bores ranging in sizes from $\frac{1}{2}$ " to 7" are taken by 14 of these mandrels. They are sold either singly or in sets.

Write Us for Further Information

W. H. NICHOLSON & CO.
117 OREGON ST., WILKES-BARRE, PA.

Chicago Steel Power Shears



Lengths 3 to 16 ft.

Capacities, 14 ga. to 1" Plate.

Unbreakable Steel
Construction.

All Modern Features for Fast
and Accurate Shearing.

Send For Catalog

DREIS & KRUMP MFG. CO.

*Pioneer Manufacturers of Steel Plate Constructed
Sheet Metal Working Machinery*

7440 Loomis Blvd.,

CHICAGO, ILL.

This Publication

Over 29 years ago this publication began advertising the products of reliable manufacturers to the metal-working trade. It is mailed regularly each month to every worthwhile prospective buyer of machinery, equipment, supplies and services in the industry. In the 28 years it has been published, millions of dollars worth of merchandise has been purchased by its readers.

Those who receive this publication regularly read it and respond to its advertising messages. Thousands of plants use it as a buying guide. We believe we sell more products per dollar of advertising than you can obtain in any other way. It is precisely the one medium that can produce profitable results for its advertisers at a reasonable cost.

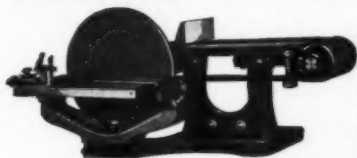
Rates, circulation and other data on request

Hitchcock Publishing Co.

508 So. Dearborn St.,

Chicago, Ill.

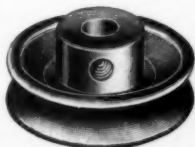
High Quality Abrasive Grinder



This abrasive band grinder is of high grade, sturdy construction, and guaranteed to be as represented; length of Band Grinder 15 in. Length

overall, 19 in.; price as shown, \$26.50 with 3 abrasive belts. Abrasive band grinder without disc and table, \$18.50. Your money refunded if not satisfied.

STEEL PULLEYS—Rolled edge "A" groove, sizes $1\frac{1}{4}$ in. to $15\frac{1}{2}$ in., O. D. "B" groove, 2 in. to 19 in. O. D. Highest quality—write for Circular today.



Up To Date Mach. Works
2900 S. Wabash Ave., Chicago, Ill.

A PRECISION MICROMETER FOR \$1.50



Size 0 to 1"

Guaranteed to be absolutely accurate. Money refunded if not satisfactory.

Other sizes priced in proportion.

Send Money Order or Check. Include ten cents to cover postage.

BRADLEY MACHINERY CO.
6500 Epworth Blvd., Detroit, Mich.



Strand

**POWER
SCREW DRIVING
AND
NUT SETTING
MACHINES**

SEVERAL SIZES
VERTICAL AND
HORIZONTAL TYPES

THE MOST PRACTICAL
MACHINE
MADE FOR THIS
CLASS OF WORK

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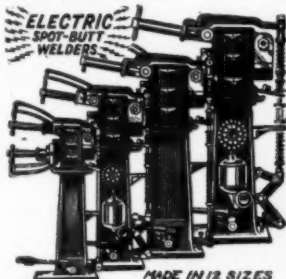
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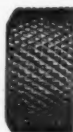
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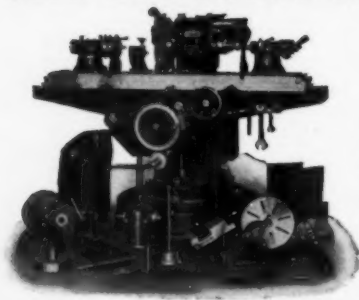
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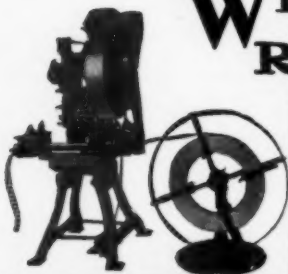


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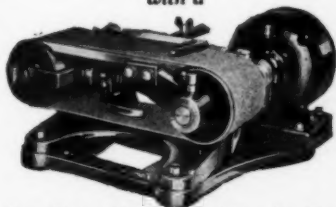
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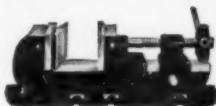


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Steage Electric & Machinery Co., 12 1/2 So.
Clinton St., Chicago
Stegeman Machinery Co., Milwaukee, Wis.
Strong, Carlisle & Hammond Co., Cleveland
Sun Machinery Co., 28 Van Buren Street,
Newark, N. J.
Victor Machinery Co., 128 S. Clinton Street,
Chicago, Ill.
Victor Machinery Exchange, 281 Center St.,
New York City
Waters, C. H., Elkhart, Ind.
West Penn Machinery Co., Pittsburgh, Pa.
White Mch. Co., A. D., 108 N. Jefferson
St., Chicago
Wigglesworth Mch. Co., Cambridge, Mass.
Winterhoff Tool & Mch. Co., Elkhart, Ind.

Valves, Foot, Lever & Solenoid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Vises, Drilling Machine

Armstrong-Hum Mfg. Co., 341 N. Francisco
Av., Chicago
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago
Graham Manufacturing Co., Providence, R. I.
Heuser Mfg. Co., 1638 No. Paulina St.,
Chicago, Ill.
Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'

Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Graham Manufacturing Co., Providence, R. I.
Hartford Special Mch. Co., Hartford, Conn.

Vises, Shaper

Graham Manufacturing Co., Providence, R. I.

Welding Machines, Electric Spot

Esler Engineering Co., Inc., Newark, N. J.

Welding Machines, Resistance

Esler Engineering Co., Inc., Newark, N. J.

Wheels, Grinding

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.
Dumore Co., Racine, Wis.

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery and the publisher will pass them along to the advertisers.

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Drill, Allen 6 spindle, h. s.
Drill, ISS Garvin duplex, 24" cap.
Grinder, 10" x 36" Norton.
Grinder, No. 10 B. & S. ext.

Hobbers, Nos. 3, 12-B & C.
Lathe, No. 9 LeBlond multi-cut.
Millers, Nos. 1 & 2 Brown & Sharpe.
Turret lathe, Nos. 2 & 6 Warner & S.

FOR SALE BY

J. Bleser Mfg. & Machy. Co.,

16th & Madison St., Springfield, Ill.

Boring mill, No. 31 Lucas horiz.
Lathe, 14" x 6' complete, \$145.
Lathe, 14" x 6' Hendey-comp. \$495.
Lathe, Lodge & S., 36" x 18' q.c., m.d.
Lathe, turret, No. 2 W & S. hand \$175.

Miller, 3H LeBlond plain, \$500.
Miller & driller, No. 2 Knight, \$295.
Press, arch Amer. Can No. 4, \$245.
Punch, shear, coper, Ryerson comb.
Shapers, 16" \$165; 12" \$150, G. & E.

FOR SALE BY

E. L. Klauber Machinery Co.,

320-22 S. Third St., St. Louis, Mo.

Drills, 3 spindle Dwight Slate; multiple 10 spindle Bausch.
Gear cutter, 24" Whiton automatic, for spur, bevel and worm gears.
Lathes, 30" x 14' Bradford, 22", 24" x 12' Lodge & Shipley d. b. g., q. c. g.
Punch & shears, No. 18 Williams & White double end.
Screw machines, No. 3 Wood tilted turret; No. 0 Brown & Sharpe automatic.
Tapping machines, 1/2" cap. Rickert Shafer horizontal; No. 2BG Garvin.

FOR SALE BY

Segal Machinery Co.,

810 W. Lake St., Chicago, Ill.

Drill, 5' Dreses, s.p.d., gr. box. \$350.
Grinder, 30" Besly, 2 table & press.
Miller, No. 1 Kempsmith divid. hd.
Compressor, Ingersoll-Rand 2-stage, 9x12 and 14x12 cylinders.
Converter, 220 k. w. West'hse. v. d. c., 800 amp, a. c., 3 ph., 60 cy., 1200 rpm.
Surface grinder, No. 3 Brown & Sharpe Planer Type, magnetic chuck, \$250.
Planer, 36x36x10' L. & D., 2 heads on crossrail, 350.

FOR SALE BY

Midland Steel & Equipment Company

Phone: Wabash 0880

402 S. Clinton St., Chicago, Ill.

Drill, radial, 3' Western.
Drill, radial, 5' Cin-Bick. Univ.
Drill, 1 spindle Demco, h. s.
Grinder, No. 6 Gardner, disc & sur.
Lathe, 18" x 12' Greaves-Klusman.

Miller, No. 2 American, plain.
Miller, No. 4 Becker, plain, h. d.
Presses, Nos. 63 & 73 Consolidated.
Roll leveler, 36" Poole, 16 ga., m. d.
Tapper, No. 2 Garvin, automatic.

USED AND REBUILT MACHINERY

FOR SALE BY

McDonald Machinery Co.,

Bolt mchs., Landis & Acme 14".
Boring mill, Lucas No. 21 horizontal.
Brake, D. & K. 6' 10 gauge, power.
Drills, Cin-Bickford 3' & 3 1/2' radials.
Drill, Sipp 4-sp., h. s., b. b. pwr. fd.
Gear hobber, G. & E. 24" & 60".
Grinders, B. & S. No. 2 surf. & univ.
Grinder, Cincinnati 14"x72" plain.
Keyseaters, M. & M. No. 2.
Lathes, Hendey 20"x10', 13"x6' & 20"x12' grd. hd.; 50 others in stock.
Milling machines, B. & S. No. 5, vert.
Milling mchs., B. & S. No. 1 1/2 Cinc. No. 1 1/2, Hendey No. 1-B, Kemp. No. 3; Ohio No. 29; LeBlond No. 4

1535 N. Broadway, St. Louis, Mo.

heavy, all universal; Kemp. No. 1, LeBlond No. 3-H; Brown & S. No. 3-B, s. p. d., Cleveland No. 2, s. p. d., all plain, Cincinnati 12" Mig.; Cincinnati Semi-Auto.
Pipe mchs., Curtis, B. & K. 12" m. d.
Punch press, d. c. grd., 79" between uprights, 5" stroke, wt. 38,000 lbs.
Screw machines, Foster No. 5, gr. hd.
Shapers, G. & E., S. & M., Cin., Ohio, American, Steptoe, Queen City, 12", 16", 18", 20", 24" and 28".
Square shears, Bertsch 10' 16 ga.
Turret lathes, W. & S. No. 2A univ.
Turret lathes, Libbey & Gish.

FOR SALE BY

Marr-Galbreath Machinery Co.,

Air compressor, 10x10" Chgo., n.s.b.
Air comp., 15-21 cu ft., 175 lb., m. d.
Angle roll, No. 3 Niagara, 14x3/16".
Boring mill, horiz. 4" bar, Niles.
Boring mill, 30" Colburn.
Boring mill, 36" Bullard, s. h., m. d.
Boring mill, 54" Colburn, m. d.
Boring mill, 84" King for m. d.
Brake, 8' x14 ga. D. & K., belt.
Brake, 48" x18 ga., P.S. & W., hand.
Brake 10' Keene toggle, 16 gauge.
Brake, 10' x3/16" Dries & K., power.
Broaching mch. Nos. 1 & 3 LaPointe
Crimping roll, 64" Robinson, 16 ga.
Drills, 20" b. g., p. f.
Drill, 26" Rockford, g. f. taper att.
Drills, radials, 3' & 3 1/2', Cin.-Bick.
Drill, radial, 3' Dreeses, 3' Cinn.-B.
Engine, Diesel, 200 h. p. horizontal.
Forging mchs., 14", 3" & 3 1/2" (steel).
Generators, 50 & 125 k.v.a., Fa-Mo., 3/60, 230 v.
Grinder, 12"x96" Landis pl., for m. d.
Grinder, No. 1 1/2 Landis universal.
Grinder, universal t. & c. Nos. 2 & 3.
Hack saw, 13"x16" Peerless, b. d.
Hammer, No. 2-B, Nazel, m. d.
Hammer, 40 lb. Bradley, H. H.
Hammer, 100 lb. Bradley, U. S.
Hammer, 800 lb. Erie stm. forg., s.f.
Hammer, 1000 lb. Chbg., steam drop.
Hoists, chain, 1 to 8-tons capacity.
Keyseater, 24"x24" Morton.
Lathe, 13"x6" Sebastian g. h., a.c.m.
Lathe, 14"x6" Davis, q. c. g., t. a.
Lathe, 15"x6" National, q. c. g.
Lathe, 18"x8" Superior q. c. g. & cs.
Lathe, 16"x8" South Bend.
Lathe, 16"x10" W.-B., q. c. g.
Lathe, 20"x8" Hendey, tie-bar, t. a.
Lathe, 20"x10" Hendey tie-bar, t. a.
Lathe, 18"x12" Hendey, t. b.; t. a.
Lathe, 19"x10" LeBlond, q. c. g., t. a.
Lathe, 24"x14" S. & B., LeBlond g. h.

58 Water St., Pittsburgh, Pa.

Lathe, 48"x28" geared head, m. d.
Miller, No. 2 Cincinnati, pl. cone.
Miller, No. 4 Hendey, Lincoln type.
Millers, plain, No. 3 LeBlond.
Milling mch., No. 2 Cincinnati.
Miller, No. 25 Becker, plain.
Miller, No. 28 Ohio; No. 3 Cin'ti.
Miller, 2-GS. Hendey, g. b., s. p. d.
Millers, horiz. No. 4 Ohio, 72x30x20"
Millers, vert., Becker, 3
Motors, 1, 2 & 3 ph., also d. c.
Pipe machine, Williams, 3", s. p. d.
Pipe machine, 8" Jarecki.
Planer, 24"x24"x4' Pond, 1 head.
Planer, 30"x10' W. & P., 2-heads.
Presses, horn, equal No. 16 Bliss.
Presses, trimming, No. 58 1/2 Tol., m. d.
Press, 42-h.p. Toledo, horn, plain.
Presses, o. b. i., 18, 20 Bliss, m. d.
Press, 74 1/2 S. Bliss b. g., 10" str.
Press, 75 1/2 Bliss, b. g., t. r., 5" str.
Press, 78 1/2 Bliss, d. g., t. r., 10" str. (2).
Presses, 250-ton B. & B. tire, vert.
Punch, s. e., Badger, 7" thrt., 8"x1 1/2".
Punch, s. e., No. 1 L & A 14"x1", 30" t.
Punch & shear, d. c. 16" thts; 14"x1" with angle & barshear blades, m. d.
Punch & sh., S.E. No. 6 L. & A. 4"x1"
Riveters, 2-A, 5 1/2-B, high speed.
Shaper, 20" Cin. G. B., a. c. motor.
Shapers, 16" G. & E., m. d.
Shaper, 24" Hollingworth b. g., vise.
Shaper, 24" P. & J. down feed & m. d.
Shaper, 25" S. & M., b. g., crk., b. d.
Shear, foot, 36" Niagara, 18" gap.
Shear, thtless Lennox, 3".
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, 10"x16 ga. Ohl power.
Slotter, die, Garvin, cone drive.
Testing mch., 200,000 lb. Olsen, pl. 75.
Testing mch., for cement, 5000 lb. cap.
Welder, butt, 200 & 300 k. w.
Wheel press, 60-ton W. S., 34"x8 1/2".

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air compressors, 30 to 2500 cu. ft.
 Baler, 14P Loge, hop'r. 72"x30"x19".
 Bolt cutter, 2" Acme, agl. hd., b. d.
 Boring mill, 24" Bullard, New Era.
 Boring mill, 44" Gisholt, 2 hds. s.p.d.
 Bor. mills, 42" & 62" Bullard, 2 heads.
 Boring mill, 72" Niles, 2 heads, m.d.
 Boring mill, 10-16, Niles, b. d.
 Bor. mill, Niles floor type, 4 & 6 1/2" bar.
 Boring mill, hor. 4" bar Bement, m. d.
 Brakes, hand, 8"x16 ga. Chicago.
 Brake, box & pan, 60"x10 ga. D. & K.
 Brake, 10' Drcis & K. 1/2", m. d.
 Bulldozers, Nos. 2, 4, 6, 9, 28, & 30.
 Cranes, Electric Traveling.
 Die sinker type BL, 36x20 Keller.
 Draw bench, 150,000 lb. Stand, m. d.
 Drill, mult. 4-spdl. Avey, belt drive.
 Drill, 4-sp. Colburn, table 20x72.
 Drill, radial, 21" Fostick, t. a., b. d.
 Drill, radial, 4" Prentice, t. a., b. d.
 Drill, radial, 5" Cin-Bick. t. a., s.p.d.
 Drill, rad., 6" Cin-Bickford, t. a., m. d.
 Drill, radial, 6" Dreeses, s. p. d.
 Drills, upright 10" to 36".
 Engine, gas, horiz., 20h.p. Bessemer.
 Flanger, McCabe, 1/2" capacity, dies.
 Forge, No. 409 Champion, 40x30.
 Forging mch. 11" Acme, st. fr. b. d.
 Gear cutters, 11", 18" & 24" Gleason.
 Gear cutter, spur, 36"x10" Newark.
 Grinder, elec. 8" B. & D., dbl. end.
 Grinder, nail die, No. 101 Bridg., m. d.
 Grinder, rad., 14" M. & D., m. d.
 Grinder, surface, No. 2 Brown & S.
 Grinder, surf. 42" Spring, tbl. 18x84".
 Grinder, surface, No. 16 Blanchard.
 Grinder, tool & cut., No. 2 Walker.
 Generators, eng., oil, gas, belt & mtr.
 Hammer, Blacker, power, 35-lbs.
 Hammer, 80-lb. Bradley, cush. helve.
 Hammers, Nos. 2-B, 3-B, 4-B, Nazel.
 Hammers, steam, 600 lb. to 6000 lbs.
 Keyseater, Nos. 3 and 8 Mitts & M.
 Keyseater, No. 0 & 3 Baker.
 Lathe, 16"x6" LeBlond, q. c. g., d. b. g.
 Lathe, 18"x6" Monarch, g. h., qcq., m. d.
 Lathe, 14"x12" Lodge & S., g. h., m. d.
 Lathe, 18"x8" L. & S., grd. hd., m. d.
 Lathe, 18"x10" Sidney, q. c. g. t. a. b. d.
 Lathe, 24"x16" Bridgeford, g. hd. m. d.
 Lathe, 28"x21" 6" Bridgeford, g. h.
 Lathe, 48"x26" Bridgeford, g. hd. m. d.
 Lathe, 61"x29", H. S. & G. grd. hd. m. d.
 Lathe, gun boring 49"x82" m. d.
 Lathe, turret, No. 6 Warner & S.
 Lathe, turret, 18" Libby, m. d.
 Lathe, turret, 24" Steinfle, 64" hole.
 Lathes, spinning, 22"x5", b. b., b. d.
 Miller, duplex, 24" Cincinnati, auto.
 Miller, pl., Nos. 3 & 5 Cinc., s. p. d.
 Miller, pl., No. 34 Ohio, tbl. 13 1/2"x60".
 Miller, universal, No. 3 LeBlond.

Miller, univ. Cin. tbl. 56"x13 1/2" m. d.
 Miller, vert. No. 2 Cin. tbl. 54 1/2"x11".
 Motors, a. c. & d. c.
 Nut tapper, Acme, 10-spdl 1 1/2", s. auto.
 Nut mche., Wat. Far. 1/2" cold. b. d.
 Pipe machine, 2" Landis, belt drive.
 Pipe mches., 4", 6" & 8" Oster.
 Planer, 30"x30"x10" Woodward & P.
 Planer, 42"x42"x10" N.-B.-P. 3 hds.
 Planer, 60"x60"x18" Pond, 4 hds. rev.
 Planer, 86"x96"x33" 4 hds. rev. m. d.
 Planer, o. s., 36"x36"x16" D. & H.
 Planer, o. s., 48"x48"x16" D. & H. m. d.
 Press, arbor, No. 17 Green., 18-ton.
 Press, auto., McDonald, No. 31-E.G.
 Press, No. 69N Bliss, dbl. act. cam.
 Press, o. b. i. Bliss, Nos. 18, 19, 20.
 Press, No. 6-A Tol. o. b. i. bed 34x34".
 Press, No. 4 Nia. o. b. i., grd. 3" str.
 Press, No. 6 1/2 Wat. Far. draw & red.
 Press, screw, No. 87 Niagara.
 Press, wheel, 130-ton Wat. S. 60".
 Press, wheel, 200-ton Elmes, 48".
 Press, wheel, 300-ton, motor drive.
 Punch, hand, Shatz, No. 235-A.
 Punch, EF Cleveland, 36" thr., 1 1/2"-1"
 Punch, No. 56 H. & W. 1 1/2", 12" thr.
 Punch, mult., No. 5 H. & J. 10' & 8".
 Riveters, air, hammer, spinning.
 Rolling mill, cold, 8"x9" Bliss, new.
 Roll, bend, 50" Bertsch, 3/16" init. type
 Roll, bending, No. 7 Bertsch 8"x 1/2".
 Rolls, bending, 12"x3" H. & J. d. e.
 Roller, thread, Nos. 10, 30, 40 W.-F.
 Saws, band, 26 and 33" Fay & Egan.
 Saw, friction, Nos. 2 & 3 Ryerson.
 Saw, hack, 4"x4" Racine Jr., m. d.
 Saw, hack, No. 4 Robertson, 3"x8".
 Saw cold, No. 6 Coch.-Bly, s. p. d.
 Screw mchs. Nos. 52, 53, 55 Nat. A.
 Shapers, 16", 20", 24" & 36" G. & E.
 Shaper, 24" Flather, m. d.
 Shaper, 48" Morton draw cut, m. d.
 Shear, angle, 6"x6"x1" H. & J.
 Shears, alligator, 1 1/2", 2", 3" & 4".
 Shear, bevel, Lennox 1/2", b. d.
 Shear, circle, No. 13A Niagara, b. d.
 Shears, foot, 30" and 36" Pexto.
 Shear, guil. No. 5 H. & J. 4" sq., m. d.
 Shear, 8" Bertsch, 1/2", 18" thr., m. d.
 Shear, 12" x 1/2" Wheeling, 31" gap.
 Slotter, 15" B.-M. tbl. 30" dia., m. d.
 Slotter, 36" Bement, crank; 15" Dill.
 Straightner, 2-A Kane & R. 20-roll.
 Straightner, 72" Newbold, 9-roll m. d.
 Straightner, 4" round Abramson.
 Str. & sh., No. 1036 B. & J. 9"x3/16"
 Testing mche., Brinnell hardness.
 Thread rollers, 5/16", 1" & 1 1/2", b. d.
 Upsetters, 1" to 6".
 Welder, arch, 220 amp. Hobart, a. c.
 Welder, butt, 40 k. w. T. W. B. 45-40.
 Welder, seam, 100 k. v. a. Gibb. El.

USED AND REBUILT MACHINERY

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

Drill, radial, 4' American.
Drill, No. 12 P. & W. mult. spdl.
Gear cutter, No. 13 B. & S., spur & b.
Grinder, No. 2 Morse universal.
Hammer, No. 5 Beaudry Champ'n.

Lathe, 29"x27" S. & B., q.c.g., taper.
Miller, No. 2A Brown & S. Univ.
Press, No. 1 Pawt., cold punch, nut.
Screw machines, No. 2 B. & S. auto.
Shaper, 20" Rockford, b. g.

FOR SALE BY

C. H. Waters Machinery Co.,

221 Harrison St., Elkhart, Ind.

Dividing head, 14" Cincinnati univ.
Miller, No. 3 Cincinnati, plain.
Miller, No. 2M Cincinnati univ.
Miller & driller, No. 1½ Knight, vert.
Slotter, 16" Newton.

Shapers, 20 & 21" Gould & Eberhardt
cone drive, back geared.
Presses, No. 104 Bliss Cons. d. c.
motor drive, like new.
No. 02 Bliss double crank.

Many others. Send us your inquiries.

FOR SALE BY

A. R. Marsh Machinery Co.,

4900 W. 73rd St., Cleveland, Ohio

Lathe, 20x12 Hendey tool room, with taper attachment, like new.
Press, forcing, 30 ton Lucas power, 30" bet hous., A-1 condition.
Press, horning, No. 126 Stoll, 24" thr. for sheet metal workers, A-1 cond.
Press, vertical 400 ton hydraulic, A-1 condition.
Welder, butt, 25 KW Federal, cap. 1½" round, 220 v. 60 cycle, A-1 cond.

Write for full particulars. Over 500 tools in stock.

FOR SALE BY

The E. L. Easley Machinery Co.

Telephone Lincoln 6320

831 Rees St., Chicago

Brake, 8' 18 ga. D. & K., hand.
Drill, 4 spindle Allen, m. d.
Miller, No. 3 Cincinnati univ.
Miller, No. 2 BS, K. & T., pl. dbl. o. a.
Press, No. 2 Toledo, o. b. i.

Press, No. 21½ Bliss, o. b. i.
Shears, 42" Stoll, 16 ga. cap.
Shear, 10' ¼" cap. Streine, m. d.
Shears, 10' 3/16" cap. L. & A., m. d.
Welder, spot, 25 k. w. Federal.

FOR SALE BY

J. L. Lucas & Son, Inc.,

3 Fox St., Bridgeport, Conn.

9—No. 2 BROWN & SHARPE AUTOMATIC SCREW MACHINES
Rebuilt—standard equipment:

Serials 1026—1492—1656—1842 each.....\$725.

Serials 3222—3370—3407 each.....825.

Serial 4290.....925.

Several nice 00—00G—0 high speed—2G—No. 6F. A.

Ask for our rebuilt prices on these.

FOR SALE BY

Hess-Schenck Company,

3951 St. Clair Ave., Cleveland, Ohio

Automatic, 2" Model B Cleveland plain, 15" feed.
Boring mill, No. 1 24" bar Cleveland, horizontal motor drive.
Boring mill, 6½" bar Niles horizontal floor type.
Grinder, No. 2 B. & S. surface.
Keyseater, No. 3 Baker.
Press, No. 5 American geared.
Wire drawing, No. 1 cone Waterbury, ten die.

Shapers, 17" & 21" Smith & Mills.
Turret lathe, No. 1-B Foster univ.
Turret lathe, 28" Gisholt.

USED AND REBUILT MACHINERY

FOR SALE BY

J. P. Rentschler & Co., - **6722 N. Maplewood Ave., Chicago**

Presses, several inclinables.
Press, No. 2-W Bliss wiring.
Presses, Nos. 201A, 201C Toledo d.c.
Press, embossing, 500 ton cap.
Press, No. 14 $\frac{1}{2}$ Toledo Horn., grd.

Press, No. P5 Ferracute Fw.
Press, No. DG54 Ferracute, 8" st.
Apr. brake, No. 206 D. & K. 10" x $\frac{1}{2}$ ".
Riveting hammer, No. 3-A Hi-speed.
Miller, No. 3A B. & S. univ.

FOR SALE BY

The Elyria Belting & Machinery Co.,

Corner Williams and Buckeye Streets, - **Elyria, Ohio**

Brake, bending, 10' Dreis & Krump Chicago Steel, 18 ga. x 10'.
Bulldozers, No. 3 and No. 5 Williams & White.
Compressor, 3200' G. E. centrifugal, 1.5 lb. pressure with 10 h. p. motor.
Compressor, 20x12 $\frac{1}{2}$ x16 Sullivan, 872 cu. ft., 100 lb. pressure.
Chain drawbench, 25000 lb. 22' draw, b. d.
Drill, No. 25 Foot-Burt, 34" swing.
Drills, Nos. 2 & 4 Colburn heavy duty mfg.
Drill, Henry & W. 3-spindle b. b.
Drill, 20" Barnes, 4-spindle.
Lathe, 20x12' Wickes, d. b. g.

Lathe, 14x6' Mulliner tool room.
Shapers, 24" & 34" G. & E., crank.
Shear, 10' Clev., $\frac{3}{4}$ " cap., 7 $\frac{1}{2}$ h. p. mtr.

FOR SALE BY

Scott-Bansbach Machinery Co., **4607 West 20th St., Chicago, Ill.**

Miller, No. 2H B. & S. plain, cone type, with vise, c/s and arbors.....	400.
Miller, No. 2 Van Norman with sub head only, belt drive.....	300.
Miller, No. 2 MU. Garvin universal, fully equipped.....	350.
Miller, 12" Cincinnati, mfg. type, s. p. d., vise and pump.....	150.
Miller, Briggs, G. & E. manufacturing, 16".....	75.
Miller, No. 5 Becker vertical, no rotary.....	300.
Miller, No. 7 Becker, Lincoln type.....	75.
Miller, Ingersoll slab, 42" x 36" x 9".....	400.
Planer, 24x24x6 Ohio heavy duty, 1 head.....	250.
Planer, 24x24x6 Fitchburg, 1 head.....	100.
Planer, 36" x 36" x 12" Cincinnati with 2 heads.....	800.
Press, No. 9 Consolidated bench o. b. i. with mtr., 1 $\frac{1}{2}$ " str. 350 lbs. 7 $\frac{1}{2}$ ton	100.
Press, No. 1 $\frac{1}{2}$ Consolidated o. b. i. 2 $\frac{1}{2}$ " stroke, 900 lbs., 10 $\frac{1}{2}$ ton, with	
geared friction motor.....	175.
Press, 1 $\frac{1}{2}$ Robinson o. b. i. 1 $\frac{1}{2}$ " stroke, 1500 lbs., 24 ton cap.....	150.
Punch, 10" throat, single end, Kneeland or Spaulding.....	100.
Riveter, No. 82 Grant bench type, belt drive, $\frac{1}{2}$ " capacity.....	35.
Riveter, No. 3A, high speed hammer, capacity $\frac{1}{2}$ ", with motor.....	200.
Riveter, No. 3 A, H. D. High speed hammer, cap. $\frac{1}{2}$ ", belt driven.....	150.
Riveter No. 5 A, High speed hammer, cap. $\frac{1}{2}$ ", motor shelf.....	275.
Saw, No. 2 Klem, band, for metal cutting, belt drive.....	300.
Saw, Napier, model B, band, for metal cutting, belt drive.....	300.
Scleroscope, Shore complete.....	125.
Screw machine, No. 2 Foster, friction back geared, 1" capacity.....	175.
Shear, 30" Bertsch, 16 gauge, 12" gap, foot power.....	75.
Separator, Springfield, oil, $\frac{1}{2}$ bushel.....	50.
Separator, Curtis oil, 1 bushel.....	200.
Separator, oil, American 1 $\frac{1}{2}$ bushel.....	200.
Separator, McKinzie for separating chips, belt drive.....	150.
Shaper, 16" Smith & Mills hvy. duty, back geared crank, vise and c/s.....	200.
Shaper, 20" Cincinnati, crank, back geared, vise and c/s.....	350.
Shaper, 20" Columbia, H. D., back geared crank, vise and c/s.....	400.
Shaper, 24" Walcott, H. D., back geared crank, vise and c/s.....	400.
Turret lathe, 24x10" Milholland, for chuck and bar work.....	400.
Turret lathe, 24" Steinle, 4" hole, side carriage.....	200.
Welder, butt, Toledo, 8 KW., capacity $\frac{1}{2}$ " round.....	150.
Welder, spot, American, 12 k. v. a., 12" throat, Type L. D. A.....	175.

USED AND REBUILT MACHINERY

FOR SALE BY

Winterhoff Tool & Machine Co., 112 S. Elkhart Ave., Elkhart, Ind.

Drills, 10" to 3', plain, back gear and radial.
Grinder, Brown & Sharpe Universal tool and cutter No. 12.
Lathe, South Bend 13"x5", q. c. g., taper attachment, collets, c/s.
Planer, Gray 24"x24"x5', c/s.
Saw, Peerless 4"x14", motor drive.
Shaper, G. & E. 24", b. g., high duty, cone drive.

FOR SALE BY

Victor Machinery Company, 126-128 S. Clinton St., Chicago, Ill.

Automatics, 2" Cleveland.	Miller, No. 29 Ohio univ., vert. hd.
Drill, 3' Mueller rad. s. p. d.	Miller, No. 3 Becker vert. m. d.
Drill, 4 spindle Barnes Camel back.	Screw machines, Nos. 1 & 4 W. & S.
Grinder, 10x36 Webster & P., univ.	Screw mach., No. 0 & 00 G. H. & S.
Lathe, 16x6 Sidney, q. c. g.	Shear, 6' Bertsch, pwr., gap 3/16" cap.
Lathe, 19x8 Sidney, q. c. g., t. a.	Welders, new, 5 k. w. Dyer spot, 220 v.
Large stock of punch & drill presses, hack saws, shapers, and surf. grinders.	

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street, Cambridge, Mass.

Borer, No. 35 Landis floor.	Miller, No. 3 Brown & Sharpe.
Boring mill, No. 0 G. & L.	Miller, 48"x24"x10' Ingersoll.
Engraver, E. 5 Keller.	Miller, 3B heavy Brown & Sharpe.
Grinder, 20"x168" Landis plain.	Spline miller, 6' Taylor & Fenn.
Grinder, 53" Besly horizontal disc.	Jones & Lamson, 2 spdl., like new.
Lathe, 25"-28"x24" Le Blond, gd. hd.	Shear, combination, Schatz.
Lathe, 30"x15" Niles-Bement-Pond.	Turret lathe, No. 6 Warner & S.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Bending rolls, 10' Bertsch, 1/2" cap.	Lathe, 38"-60"x32" McCabe 2 in 1.
Boring mill, 34" King, 1 head.	Miller, No. 3 B. & S., pl., s. p. dr.
Boring mill, 72" Gisholt vert., 2 hds.	Miller, Univ. No. 2A Brown & S.,
Column facer, 14" Espen-Lucas.	range 25"x8"x18".
Crane, electric travel, 15 ton a. c. mtrs.	Pipe machines, 2, 4, 6, 8 and 12"
Drills, all sizes, upr., sensi. & radial.	belt and motor drive.
Drill, Minster heavy duty 2 1/2" cap.	Punch, No. 3 Southwark 1 1/2", mtr.
Grinder, 10"x52" Landis, self contained, plain.	Punch, Thomas angle duplikator.
Hammer, 800 lb. Erie, steam forging.	Shear, Niagara 8', cap 3/16", 1" gap.
Lathe, 18"x6" Monarch, taper.	Shear, Bliss 4', cap. 1/2", 8" gap.

FOR SALE BY

Midwest Equipment Co.,

628-30 W. Lake St., Chicago, Ill.

Air compressors, 8x6, I. R. compl.	Miller, No. 0 Brown & Sharpe pl.
Gear hob., No. 12, 3 B.-C., arbor, grs.	Miller, Harding bench type, col.
Grinder, No. 2 B. & S. with mag. ck.	Miller, No. 1 1/2 Rockford, plain.
Lathe, 17x8 Sidney, l.c.g., complete.	Miller, No. 2 Becker, vertical.
Lathe, 16x8 Hendy, q. c. g., tap. att.	Press, 30 ton Lucas straightening.
Lathe, 14x6 Sidney, quick ch. gear.	Press, No. 78-C Niagara dbl. crank.
Lathe, 34x10 Wolcott, q. c. g., comp.	Punch press, No. 5 R. & K. o. b. i. 3"
Lathe, 12x5 Pratt & W., q. c. g., col.	Screw mchs., Nos. 4 & 3 Foster, w. f.
Lathe, Stark 1 1/2" & 1" cap. with col.	Shear, Quickwork, pwr. dri 14 ea. cap.
Miller, No. 1 Kempsmith pl., comp.	Spot welder, 19 kva Thom., 14" arm.
Planers, Lathes, Screw Machines, Air Compressors, Woodworking Machines.	

USED AND REBUILT MACHINERY

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S.

Pittsburgh, Pa.

Air compressor, 21 cu. ft. Gardner.
Air compressor, 170 cu. ft. Worth'n.
Automatic, 3" cone, 4 spdl., m. d.
Automatic, 1 1/2" Cleve. 4-spdl., m. d.
Bulldozers, Nos. 3 and 9 W.-W.
Drill, 4 spindle No. 4 Colburn Mfg.
Drill, 4 spindle No. 2 Colburn, Mfg.
Drill, 6' Western radial, motor dr.
Drill, 6' Cincinnati-Bickford, radial.
Drills, radial, 5' & 6' Niles, cheap.
Hammer, 100 lb. Beaudry upright.
Lathe, 24"x10' Whitcomb g. h., m. d.
Lathe, 48"x20' Betts-Bridge., m. d.
Miller, No. 2 Cincinnati univ., cone.

Press, No. 6 Bliss, double crank,
with Marquette cushion.
Press, No. 14 Bliss toggle, 80,000 lb.
Press, No. 594 Toledo, 145,000 lb.
Shaper, 16" Whipp, b. g., vee ram.
Shapers, 24" & 32" G. & E. 230 v. d. c.
Screw mach., 8" Acme, hand. bar fd.
Screw mach., No. 4 W. & S., univ.
Shaper, 24" Cincinnati b. g. crank.
Shaper, 24" G. & H. Hi duty, s.p.d.
Shear, alligator, hi. knife, 1 1/2" sq.
Turret lathe, No. 3-A W. & S.,
4 1/2" hole, motor drive.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 Hadley Street,

St. Louis, Mo.

Air compressors, all sizes.
Bar shear, 5"x1 1/2".
Bolt header, 2" Ajax.
Bolt threaders, 1" & 1 1/2" Landis.
Boring mill, 36" Gisholt.
Bulldozer, No. 3 Williams-White.
Bulldozer, No. 4 Ajax.
Drills, 1-spindle Avev.
Drill, 6' arm American radial.
Grinder, Wells Bros. universal.
Grinder, 12"x60" Landis universal.
Grinder, 12"x36" Thompson univ.
Grinder, No. 60 Heald cylinder.
Hammer, No. 3B Nazel.
Hammer, 60 lb. Bradley helve.
Lathe, 16"x9" Lehman.
Lathes, 16"x6" tool room, (2).
Lathe, 19"x10" South Bend.

Lathe, 24"x12" Schumacher & Boye.
Lathe, 24"x14" Schumacher & Boye.
Lathe, 36"x15" American, q. c. g.
Lathe, 30"x16" Prentice, geared hd.
Millers, Nos. 3 & 4 Brown & S., pl.
Miller, No. 2 Cincinnati, plain.
Miller, Ingersoll slab, 27"x23"x14"
bed, 4 heads, motor drive.
Pipe machines, 4" and 8".
Planer, 60"x48"x10" Gray.
Press, No. 15 Bliss toggle.
Press, No. 24 Toledo cam drawing.
Press, No. 723 Toledo cam drawing.
Punch, No. 14 W. W., 12" throat.
Punch, two 20" throats, cap. 1" in 1"
Sand slinger, Beardsley & Piper.
Shaper, 16" Smith & Mills.
Shaper, 24" American, motor drive.

FOR SALE BY

The Jones Machine Tool Co.,

Front & Pike Sts., Cincinnati, Ohio

Air compressor, 10x10 Bury.
Bolt cutter, 2" Landis (long bed).
Bolt cutter, 1 1/2" Landis, single spdl.
Bolt cutter, 1 1/2" Landis, dbl. spdl.
Boring mill, No. 32 G. & L., s.p. dr.
Brake drum truing lathe, m. d.
Drill, No. 14 Colburn heavy duty.
Gear cutter, No. 13 B. & S., bevel & sp.
Gear hobber, No. 12 Barber-Colman.
Grinder, No. 1 Diamond surf. 12x24"
Grinders, disc, various sizes.
Hack saw, 8x8 Racine, m. d.
Hammer, 1000 lb. steam, s. frame.
Keyseater, No. 1 Baker.
Lathe, 24"x16" American grd. head.
Lathes, shapers & planers, all sizes.
Milling machines, all sizes.
Nibbler, No. 1 Gray 3/16" capacity.
Radial drill, 5" Am. s. p. d., enc. hd.

Radial drill, 5" Am. s. p. d., enc. hd.
Rail drill, 10" Andrews 16-sp., 4" cap.
Square shear, 10' Cinc., 3/16" cap.
Shear, 10' Poorman 14 gauge.
Shear, 60" Yoder, rotary, 16 ga.
Shear, 18" Southwark rotary, 10 ga.
Shear, 37" Toledo 16 ga. 15" gap.
Welder, 35 k. w. Federal spot.
Upsetters, 2" Ajax, belt drive.

PRESSES

No. 90-B Toledo, double crank.
No. 25 Niagara arch press.
No. 92 B Toledo 35" dbl. crank, grd.
No. 43 Robinson 46" dbl. crank, grd.
2—No. 6 Toledo, b. g. inc. presses.
Open back inclinables. Various sizes.

PRESS-BRAKES

120" Ohi, 10 ga., belt drive.
120" Bertach, 3/16", motor drive.

We have a large stock—Send for new list

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Stegeman Machinery Co., 610 W. Michigan St., Milwaukee, Wis.

Hammers, 200, 400, 800 lb., automatic.
Lathes, Nos. 1A, 2A, 3A W & S, tur.
Millers, No. 2M Cin. Vert. rot. tbl.
Pipe mchs., 4" Oster, 8" Threadwell.
Press, No. 79C Nia. 44" 100 ton grd.
Lathe, 18x10 Monarch, 8 spd., hel. grd. hd., a. c. motor-in-base excel. cond.
Miller, Kempsmith No. 2 Maximiller, ex. long 72" table, vert. head, like new.
We specialize in high grade used machinery. Over 400 tools available.

FOR SALE BY

Columbia Machinery Co., 130 E. Columbia St., Fort Wayne, Indiana

Automatics, No. 00 and 2-G's m. d.
Bending brakes, 3', 6', 8' and 10' Steel.
Miller, No. 1½ Brown & Sharpe universal, s. p., m. d.
Miller, No. 2 Ryerson-Conradson plain, s. p. d.
Miller, No. 2 Cincinnati plain, m. d.
Scleroscope, Shore dial recording.
Turret lathes, Nos. 2A, 4A, and No. 4 Warner & Swasey universal.
Tapper, Rickert & Shafer, ½", floor type, radial, m. d.
Have several large planers, boring mills, electric cranes, etc.
Let us have your wants.

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Geo. M. Bernstein & Co.,

Telephone State 4076

14 S. Clinton St., Chicago, Ill.

Bolt cutter, 1½" Reliance; dies.
Bolt cutter, 2" National; dies.
Brake, 6' x ½" D. & K., No. 166 pwr.
Drill, 2½" Fosdick radial; m. d. arr.
Drill, 3" Silver radial; s. p. d.
Drill, 20" Excelsior; bg.; p. f.; No. 4.
Drill, 24" Barnes camel bk.; all grd.
Grinder, No. 2 LaSalle surf.; chuck.
Lathe, 14"x6" Seneca Falls; equip.
Lathe, 14"x6" Champion; q. c. g. equip.
Miller, No. 1 Kemp. univ. vert. hd.
Miller, No. 1½ A Rock. pl.; vert. hd.

Miller, No. 2B Rock. univ.; slgt. hd.
Miller, No. 1 Bick. hand, pwr. feed.
Pipe machine, 4" Stoeber.
Press, No. 2 Robin., o. b. i.; 2" str.
Press, No. 3 Rock. o. b. i.; 2" str.
Saw, No. 4 Marvel, high speed.
Scleroscope, model "C" Shore.
Shaper, 16" Smith & Mills crank.
Shaper, 16" Springfield crank.
Shaper, 20" Kelly crank; b. g.
Tappers, Nos. 1 & 2 Garvin auto.
Tester, No. 1 Brown & S. spur gr.

FOR SALE BY

Brown Machinery Co.,

2333 N. 9th St., St. Louis, Mo.

Drills: 24", 26" and 32"; No. 66-D
Moline 4-spindle Hole Hog.
Drill, Allen B., single spindle.
Drill, Demco b. b., m. d.
Grinders: No. 6 Besly dbl. spindle;
No. 220 Badger auto. disc; 12x30"
Modern, plain, s. c. c. s.; No. 4
Cincinnati, 14x72 cylindrical; P. &
W. 36" vertical surface.
Hammer, 40 lb. Bradley helve;
100 lb. Little Giant.
Lathes, 30" Blaisdell, 28" Harrington
gap. ext. bed; 26" Putnam, taper
att., 18" & 16" Lodge & Shipley;
16" & 14" Monarch; 7"x6" Lo-swing;
No. 4 Wood Tilted Turret.
Millers: No. 2 Hendey-Norton, univ.;

No. 3½ Fox; No. 4 Hendey Lincoln;
Planer, 42x42x10 Pond.
Press, No. 7 Zeh & Hahneman,
Nos. 1, 3, 4 Loshbough Jordan.
Press, No. 4 Bliss, cons. comb. grd.
Punch, Cleveland C ½ in ½"; Rock
River Style L ½ in ½"
Punch & shear, No. 9C Beloit. ½ in ½".
Punch & shear, L. & A. ½" cap.
Riveter, No. 5A High Speed, ½".
Shaper, 24" Ohio; 20" Queen City.
Shaper, 20" Columbia.
Shear, 62" underdriven, cap. 10 ga.
Threaders: ½" Geometric; National
1½" double head and single head.
Welder, 20 k. w. Agnew.

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FOR SALE BY

Richard Williams, - **228 Culver Ave., Jersey City, N. J.**

MACHINE SHOP EQUIPMENT

Arbor presses, bench, No. 3 Greenerd, new.....\$22.50
Bench drills, $\frac{3}{8}$ " cap. Hisey-Wolf, new, $\frac{1}{2}$ h. p. motor, d. c.....40.00
Punch and shears, No. 2 Buffalo hand combination, $\frac{1}{2}$ " cap.....25.00

FOR SALE BY

Goldsher Machinery Company, : - **817-25 W. Lake St., Chicago**

Motors, 400 h. p. Allis-Chalmers slipring, 440 volt, 500 r. p. m., (3).
Motor, 200 h. p. West. 3 ph., 440 volt, 580 r.p.m., comp. with compensators.
Motor, 250 h. p. West. 3-60 440. 580 r. p. m., complete with compensators.
Welder, Arc, 450 amp., b. b., Lincoln portable, complete.
Enormous stock of rebuilt guaranteed motors, machine tools and equipment

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Percy M. Brotherhood & Son **114-118 Liberty Str., N. Y. City**

Boring mills, 10' Niles; 72" Sellers; 44"-54"-61" Bullard Maxi-Mills.
Lathes, 72"x40' Putnam; 72"x50' Pond.
Rolls, Hilles & Jones No. 5, 16"x8". Also H. & J. 12'-4", m. d.
Forging Machines. Press Brakes, Shears, Bending Rolls, Planers, Shapers,
Grinders, Milling Machines all sizes.
All Selected Tools.

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VERTICAL GAS ENGINE

One 35 HP Reeves Twin Cylinder Vertical Gas Engine, direct connected to a 25 KW, 125 volts direct current generator. All mounted on a heavy cast iron sub-base. This unit is in practically new condition and may be inspected at any time. The price is \$800 f. o. b. our factory and same is available immediately. Correspondence solicited.

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Davis Machinery Co., **St. Clair & Washington Sts., Toledo, Ohio**

Boring mill, 24" Bullard, side head.	Press, 19 Toledo deep throat, b. g.
Drill, 4-spindle Henry & W. h. s.	Press, 18-C Bliss o. b. i.
Drill, 3-spindle Leland-Gifford h. s.	Press, No. 3 Niagara o. b. i.
Lathe, 20"x10" American q.c.g., d.b.g.	Shaper, 20" Ohio back geared.
Millers, Model C Becker, vert., (2).	Slotter, 6" Newton.
Miller, 48" Cincinnati auto. duplex.	Tappers, No. 2 & 2X Garvin, (4)

No Risk—Completely Rebuilt

10' Betts vertical Boring Mill, geared feeds, motor drive.
 $3\frac{1}{2}$ " Bar Universal table type boring mill.
20" Smith & Mills S. P. D. shaper.
No. 2M Cincinnati Universal Miller, rectangular arm.
16"x8" Lodge & Shipley selective type geared head.
16"x72" Landis Crankshaft grinder.
Radial drills, all sizes, screw machines, etc.

Send for Complete Stock List.

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No. 6 Giddings & Lewis, 3" bar.

No. 3-A Universal, 3" bar.

8" bar Niles-Bement-Pond Fl. type.

BORING MILLS, VERTICAL

32" King, M. D.

36" Bullard "New Era."

42" Bullard "New Era."

42" King, 1 turret head, 1 plain hd.

61" Bullard Maxi-Mill, 2 plain hds.

10" Niles.

DRILLS, BALL BEARINGS

1, 2, 4, 6 spindle Leland-Gifford.

2, 4, 6 spindle Allen.

2, 6 spindle Edlund.

4, 6 spindle Henry & Wright.

4 spindle Avey.

4 spindle Sipp.

DRILLS, MANUFACTURING

21" Cinc.-Bickford Stationary Hd.

No. 2 Colburn, 1, 2, 4 spindle.

No. 14 Colburn, 2" capacity.

No. D-4 Colburn, 3½" capacity.

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No. 217 Baker, motor drive.

No. 10-D Moline Cylinder Borer.

DRILLS, RADIAL

3' American, Maxi-Speed Sensitive.

4' Western, Heavy Type.

3', 5' American, Triple Purpose.

6' American, Full Universal.

MILLING MACHINES, PLAIN

No. 1-B Milwaukee, motor drive.

No. 2-B Milwaukee, motor-in-base, Timken bearings.

No. 2-M Cincinnati, sgl. pul. dr.

No. 2 Cincinnati High Pwr., S.P.D.

No. 3 Cincinnati High Pwr., S.P.D.

No. 3-B Brown & Sharpe, S. P. D.

No. 3-B Milwaukee, sgl. pul. dr.

No. 4-B Brown & Sharpe, motor dr.

No. 4 Cincinnati High Pwr., S.P.D.

No. 5 Cincinnati High Pwr., S.P.D.

No. 5-B Brown & Sharpe, motor dr.

MILLING MACHINES, UNIVERSAL

No. 2 Brown & Sharpe.

No. 2 Cincinnati High Pwr., S.P.D.

No. 3 Cincinnati High Pwr., S.P.D.

No. 4 Cincinnati High Pwr., S.P.D.

MILLING MACHINES, VERTICAL

No. 2-M Cinc., mtr. dr., Timken brgs.

No. 2 Cincinnati H.P., motor drive.

No. 3 Brown & Sharpe, sgl. pul. dr.

No. 3 Cinc. H.P., motor-in-base.

No. 4 Cinc. H.P., intermittent feeds.

No. 5 B. & S., range 52"x12"x21".

No. 6 Becker, motor drive.

MILLING MACHINES, MANUFACTURING

24" Cincinnati Duplex, S. P. D.

No. 3 Garvin Duplex.

No. 33-36" Kempsmith Hvy. Duty.

MILLING MACHINES, SLAB

24"x13"x20" Ingersoll, motor drive.

24"x24"x12" Ingersoll, motor drive.

45"x36"x17½" Ingersoll.

Beaman & Smith Dbl. End Column Facer.

MILLING MACHINES, THREAD

4½"x12" Pratt & Whitney.

6"x14", 6"x48" P. & W. 3" spindle.

6"x48" P. & W. 3" spindle.

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No. 3 & No. 12 Barber-Colman.

No. 9-H 12" G. & E. Hobber.

No. 18-H 13"-30" G. & E. Hobber.

Nos. 7, 6, 61, 612 and 65 Fellows.

6", 10" Gleason Bevel Gear Gener.

PLANERS

24"x24"x8' Cincinnati.

24"x24"x12' Gray.

36"x36"x18' Cincinnati.

36"x36"x24' Gray.

48"x48"x10' Gray.

48"x48"x18' Putnam.

56"x56"x32' Cincinnati.

72"x72"x12' Cincinnati.

SHAPERS

16" Smith & Mills, S. P. D., auto, lubrication.

20" Stockbridge, motor drive.

24" Gould & Eberhardt, sgl. pul. dr.

24" Cincinnati Heavy Duty, Climax,

S. P. D., auto, lubrication.

28" Columbia, single pulley drive.

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No. 2 B. & S. Surface.
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16"x48" Landis Crankshaft.
No. 70 Heald Internal (3).
No. 75 Heald Internal.
10"x20" Landis Cylinder.
12"x36" Landis Cylinder.

Milling Machines

No. 3 Cincinnati, Plain, (2).
No. 4 Hendey, Plain.
No. 2B Milwaukee Univ. S. P.
No. 3B Milwaukee Univ. S. P.
No. 3 Cincinnati, Universal (2).
No. 2 1/2 B Milwaukee Vert. S. P.
No. 4 Cincinnati Vert., S. P. Late.
No. 4B Becker Vertical.
No. 5C Becker Vertical.
No. 2 Garvin Duplex.
No. 2 Knight Milling & Drill.

Boring Mills

14'-20' Niles Vertical.
42" Bullard (New Era).
44"-36" Niles Vertical.
42" Gisholt Vertical.
Lucas Horizontal 3" bar.

Turret Lathes

No. 2A Warner & S. S. P. (2).
No. 1B Foster Motor Dr., Grd. Hd.
No. 4 W. & S. Universal Turret.
No. 2 W. & S. Fox Monitor.
1 1/2" Pratt & Whit. Screw Machine.

Drills

5' Dreses Radial.
5' N. B. P. Radial.
6' Cincinnati Bickford Radial.
4 spindle Allen, High Speed.
1 spindle Sipp, High Speed.
24" Cincinnati Slide Head.
1 spindle Hisey Wolf. (50).

Lathes

10x5 Pratt & W, Tool Room.
16"x6' Lodge & S. Geared Head.
33"x12' Lodge & Shipley Cone.
18"x10' Amer. Geared Hd. (2).
24"x10' Amer. Geared Head.
46"x28' Houston S. & G. G. H. (2).
60"x50' Pond cone.
76"x40' Putnam, cone heavy.

Shapers

20" Smith & Mills, Back Geared.
24" G. & E. Heavy duty (2).
6" Pratt & Whitney Vertical.

Brakes

12' Loy & Nawrath, Motor Drive.
10"x10 Gauge Geo. Ohl.
8' x10 Gauge Geo. Ohl, Motor Dr.

Shears

8'x1/4" Geo. Ohl.
13'x14 ga. Geo. Ohl.
Yoder Rotary Slitter, 1/4" cap.

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No. 13 B. & S. Heavy NEW (2).
No. 13 B. & S. Light.
12" G. & E. Gear Hobber.

Presses

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No. 23 Bliss Knuckle Joint Emb.

Miscellaneous

Hayes Elec. Furnace Complete.
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1 1/2" Ajax Upsetter & Forger.
10" Dill Slotter.
No. 1 Baker Keyseater.
16' H. & J. Plate Planer.
Ing. Imperial Air Compressor.
25 K.W. Gen. Elec. Gen. Gas.

SPECIAL OFFERING

**No. 13 B. & S. Heavy Duty Gear Cutters,
Capacity 24"x6" (2) New.**

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| 1, 1½, 1¾ & 2 Gridley, model F. | No.s. 5A & 6A Potter & Johnston. |
| 1", 1½" & 2" National Acme. | 14" Fay chucking. |
| 1" & 1½" New Britain. | Hartness tilted type. |
| 1", No. 2 G Brown & Sharpe. | Nos. 24, 33 & 34 New Britain. |
| ½" & 1½" Cleveland "A". | 3½" & 4½" Gridley single spindle. |

BROACHES

- | | |
|------------------------------------|-----------------------------|
| Nos. 0, 3 & 3 dbl. J. N. Lapointe. | No. V 18 American vertical. |
| Nos. 3 & 4 Lapointe (Hudson). | No. 3A American, rack type. |

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|----------------------------------|-----------------------------|
| 3200' G. E. centrifugal. | 244', 10"x10" Pennsylvania. |
| 668', 17"x10"x12" Chicago O C B. | 173', 9"x8" Chicago N S B. |
| 590', 15"x14"x14" Union steam. | 136', 8"x8" Ingersoll Rand. |
| 369', 12"x10" Chicago N S B. | 92', 7"x6" Ingersoll Rand. |

GEAR CUTTERS

- | | |
|---------------------------------|----------------------------|
| Nos. 18H & 24H G. & E. hobbers. | 36" & 48" Brown & Sharpe. |
| No. 12 Barber-Colman. | 64"x20" Gould & Eberhardt. |
| 14", No. 5A Lees Bradner. | 36", No. 6 Fellows shaper. |
| 16" Cincinnati hobber. | No. 2 Bilton automatic. |

TURRET LATHES

- | | |
|---------------------------------|----------------------------|
| Nos. 4, 6 & 3A Warner & Swasey. | 1½" & 3½" Cincinnati Acme. |
| Nos. 2 & 4 Milholland. | No. 2 SP Garvin. |
| Nos. 2, 3 & 4 Foster. | 24", 34" & 36" Bullard. |

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- | | |
|-----------------------|-----------------------|
| 2½", No. 1 Cleveland. | 3", Fosdick No. 0. |
| 3", Rockford. | 3", No. 3A Universal. |

PRESSES

- | | |
|-------------------------------------|------------------------------|
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| 250 ton Consolidated coining. | No. 6 Adriance O. B. I. |
| 150 ton Ferracute coining. | No. 41 Toledo horning. |
| 48", No. 92½C Toledo double crank. | No. 22 Consolidated horning. |
| No. 286 Consolidated cam drawing. | No. C82 Ferracute notching. |
| Nos. 64, 65 & 67 Consolidated s. s. | No. P3 Ferracute. |
| No. 74½ Bliss straight side. | 35, 40 & 100 ton hydraulic. |
| No. 5N American Can gap. | Nos. 4 & 5 Greenerd arbor. |
| Nos. 3 & 5½ Toledo O. B. I. | 40 ton Jarecki die trying. |

SHAPERS

- | | |
|-------------------------|------------------------|
| 14" Davis. | 20" Gould & Eberhardt. |
| 15" Potters & Johnston. | 24" Potter & Johnston. |
| 16" Ohio. | 24" Gould & Eberhardt. |
| 16" Smith & Mills. | 28" Ohio. |
| 20" Milwaukee. | 28" Columbia. |

TAPPERS

- | | |
|------------------------------|-----------------------------|
| Nos. 1, 2, 2X & 2 BG Garvin. | ½" Rickert Shafer Vertical. |
| ½", No. 8 Gaterman. | ½" Rickert Shafer Radial. |

THREADERS

- | | |
|---------------------------|-----------------------|
| ¾" Manville roller. | 1½", 2½" & 3" Acme. |
| ¾" Acme 2 spindle. | 1½", 2" & 2½" Landis. |
| 1" Landis, 1 & 2 spindle. | 2" Landis 2 spindle. |

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No. 13 B. & S. Bevel and Spur.
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No. 4, 48" Brown & Sharpe.
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angular Overarm.
No. 4 Cincinnati H. P. Pl., S. P. D.
No. 2-B & 3-B Milw. Pl., Dbl. O. A.
Nos. 3; 5-B; 6 Becker Vertical.
No. 2A Brown & S. Univ., S. P. D.

No. 3 Cincinnati Vert. H. P., S. P. D.
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6-spindle Rockford 20" B. G. P. F.
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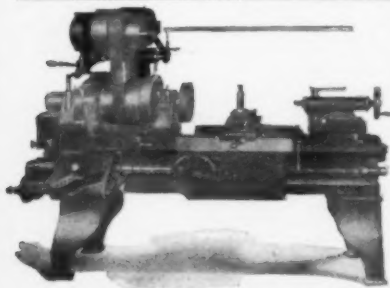
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